

Amendments to the Claims:

~~Sub B~~
A digital communication receiver (~~300, 400~~) adapted to communicate with a digital communication transmitter across a communication channel, the digital communication receiver comprising:

a channel estimator (~~330, 430~~), adapted to provide a channel estimate (H_0) of the communication channel based on a received signal (y_t);

an equalizer (~~340, 440~~), adapted to estimate a sequence of transmitted symbols (\hat{u}_t) and provide a sequence of decided symbols (\hat{u}_t) based on the received signal and the channel estimate; and;

~~AB~~
a channel tracker (~~350, 450~~), adapted to produce an updated channel estimate (H_t) based on the received signal (y_t) and the decided symbols (\hat{u}_t), and adapted to supply the updated channel estimate to the equalizer; characterized by;

a controller (~~370, 470~~), which is operatively coupled to the equalizer (~~340, 440~~) and the channel tracker (~~350, 450~~);

wherein the said controller is adapted to receive channel quality indicative data (~~Metric~~; ~~H_{start}, H_{end}~~) associated with an output from the equalizer, to determine whether said the channel quality indicative data fail to meet a predetermined criterion, and, if so, to supply an enabling control signal ("~~Tracker y/n?~~") to the channel tracker; and

wherein ~~the said~~ enabling control signal is adapted to switch the channel tracker from a disabled state, in which disabled state no updated channel estimate (~~Ht~~) is produced, to an enabled state, in which ~~said~~ enabled state the updated channel estimate (~~Ht~~) is produced.

2. ~~A~~ The digital communication receiver as in claim 1, wherein ~~said~~ the channel quality indicative data (~~Metric~~) are produced by the equalizer (340) and ~~represents~~ represent a degree of correspondence between the received signal (~~yt~~) and the decided symbols(~~ŷt~~).

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3. ~~A~~ The digital communication receiver as in claim 2, wherein ~~said~~ the channel quality indicative data (~~Metric~~) are computed by the equalizer (340) as a squared distance between symbols in the received signal (~~yt~~) and symbols in a predicted received signal given the decided symbols(~~ŷt~~).

4. ~~A~~ The digital communication receiver as in ~~any preceding~~ claim 1, wherein ~~said~~ the predetermined criterion is stored as a threshold value in an electronic memory (390) operatively coupled to the controller(~~370~~).

5. ~~A~~ The digital communication receiver as in claim 1, further comprising:
a second channel tracker(~~480~~), which is operatively coupled to the equalizer (440) and the controller(~~470~~);

wherein ~~the said~~ channel quality indicative data (~~Hstart, Hend~~) are produced by the second channel tracker in the form of additional channel estimates (~~Hstart, Hend~~) based on the decided symbols (~~ut~~) from the equalizer; and

wherein

the controller (470) is adapted to compare the additional channel estimates with an initial channel estimate (~~H0~~) and to produce ~~said the~~ enabling control signal ("~~Tracker y/n?~~"); if the comparison indicates a difference bigger than ~~said the~~ predetermined criterion.

6. ~~A~~ The digital communication receiver as in any preceding claim, claim 1, wherein the receiver is capable of Time Division Multiple Access communication.

7. A digital communication receiver (~~300, 400~~) adapted to communicate with a digital communication transmitter across a communication channel, the digital communication receiver comprising:

a channel estimator (~~330, 430~~), adapted to provide a channel estimate (~~H0~~) of the communication channel based on a received signal(~~yt~~);

an equalizer (~~340, 440~~), adapted to estimate a sequence of transmitted symbols (~~ut~~) and provide a sequence of decided symbols (~~ut~~) based on the received signal and the channel estimate; and

a channel tracker(350, 450), adapted to produce an updated channel estimate (\hat{H}_t) based on the received signal (y_t) and the decided symbols(\hat{u}_t), and adapted to supply the updated channel estimate to the equalizer, characterized by:

a controller (370, 470), which is operatively coupled to the channel tracker(350; 450), wherein the said controller is adapted to compare said the updated channel estimate (\hat{H}_t) with an initial channel estimate (\hat{H}_0) and to supply a disabling control signal ("Tracker-yn") to the channel tracker, if the comparison indicates a difference smaller than a predetermined criterion; and

wherein the said disabling control signal is adapted to switch the channel tracker from an enabled state, in which said enabled state the updated channel estimate (\hat{H}_t) is produced, to a disabled state, in which disabled state no updated channel estimate (\hat{H}_t) is produced.

8. ~~A~~ The digital communication receiver as in claim 7, the receiver being capable of Time Division Multiple Access (TDMA) communication, wherein said the updated channel estimate relates to the beginning and/or the end of a TDMA burst.

9. ~~A~~ The wireless communication device, comprising of claim 7, wherein the device comprises a digital communication receiver as in any preceding claim.

10. ~~A~~ The wireless communication device as in claim 9, wherein the device is comprises a radio telephone.

11. ~~A~~ The wireless communication device as in claim 9, wherein the device is comprises a base station in a cellular communication system.

12. A method of operating a digital communication receiver(300, 400), wherein a channel estimate (H_t) of a communication channel between the receiver and a digital communication transmitter is produced from a received signal (y_t); and ~~wherein~~ a sequence of decided symbols (\hat{u}_t) is produced from the received signal and the channel estimate, characterized by the steps of the method comprising:

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a) receiving channel quality indicative data(~~Metric, Hstart, Hend~~), which are, the channel quality indicative data being directly or indirectly associated with ~~said~~ the sequence of decided symbols(\hat{u}_t);

b) determining whether ~~said~~ the channel quality indicative data fail to meet a predetermined criterion; and

c) conditionally, if the predetermined criterion is not met, switching from a disabled state, in which disabled state no updated channel estimate (H_t) is produced, to an enabled state, in which enabled state an updated channel estimate (H_t) is produced from ~~said~~ the received signal (y_t) and ~~said~~ the sequence of decided symbols(\hat{u}_t).

13. ~~A~~ The method as in claim 12, further comprising ~~the step of:~~

a') producing ~~said~~ the channel quality indicative data (~~Metric~~) as a calculated squared distance between symbols in the received signal (~~y_t~~) and symbols in a predicted received signal given the decided symbols(~~ŷ_t~~).

14. ~~A~~ The method as in claim 12, further comprising ~~the step of~~:

a") producing ~~said~~ the channel quality indicative data as additional channel estimates (~~H_{start}, H_{end}~~) based on the decided symbols(~~ŷ_t~~); and


wherein the ~~said~~ predetermined criterion is a degree of correspondence between ~~said~~ the additional channel estimates and an initial channel estimate.

15. A method of operating a digital communication receiver(~~300, 400~~), wherein a channel estimate (~~H₀~~) of a communication channel between the receiver and a digital communication transmitter is produced from a received signal (~~y_t~~); and ~~wherein~~ a sequence of decided symbols (~~ŷ_t~~) is produced from the received signal and the channel estimate, ~~characterized by the steps of the method comprising:~~

a) receiving an updated channel estimate (~~H_t~~) based on the decided symbols(~~ŷ_t~~);

b) comparing ~~said~~ the updated channel estimate (~~H_t~~) with an initial channel estimate(~~H₀~~);
and

c) conditionally, if the comparison indicates a difference smaller than a predetermined criterion, switching from an enabled state, in which enabled state an updated channel estimate

 (\hat{H}_t) is produced from ~~said~~ the received signal (y_t) and ~~said~~ the sequence of decided symbols (\hat{u}_t),
to a disabled state, in which disabled state no updated channel estimate (\hat{H}_t) is produced.

16. ~~A~~ The method as in claim 15, wherein:

the receiver is capable of Time Division Multiple Access (TDMA) communication; and

~~wherein said~~ the updated channel estimate relates to the beginning and/or the end of a

TDMA burst.